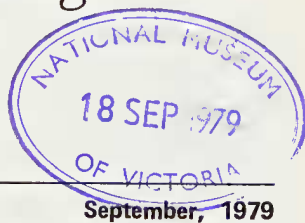


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THREE NEW SPECIES OF *AMBLYSEIUS* BERLESE FROM NEW CALEDONIA AND AUSTRALIA (ACARI: PHYTOSEIIDAE)

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Abstract

Both sexes of *Amblyseius noumeae* sp. n. and *A. montdorensis* sp. n. from various plants in New Caledonia and *A. markwelli* sp. n. from plants of the family Compositae in Queensland are described and figured.

Introduction

Recent study of mites belonging to the genus *Amblyseius* has revealed three undescribed species. *A. noumeae* sp. n. was very common on many different plants at and around Noumea, New Caledonia, in November and December, 1978. It occurred mostly on the undersides of leaves in association with phytophagous mites. *A. montdorensis* sp. n. was collected at the same time from several plants in a nursery near Noumea, and was preying on eriophyid mites. Specimens of *A. markwelli* sp. n. were obtained from plants of the family Compositae in Queensland in 1976 near strawberry plots which were used for experiments on the integrated control of strawberry mites. This new species was preying on the mite *Tetranychus urticae* (Koch).

Three females and two males of each of the new species from New Caledonia and two females and one male of the new species from Australia were measured, the values being the range in micrometres.

The following abbreviations of depositories are used: SAM South Australian Museum, Adelaide; BCRI Biological and Chemical Research Institute, Rydalmere.

Genus *Amblyseius* Berlese

Amblyseius Berlese, 1914: 143. Type-species by original designation: *Zercon obtusus* Koch, 1839.

Amblyseius noumeae sp. n.

(Figs 1-8)

Types:— NEW CALEDONIA. *Holotype* ♀ (A.nou. 1), on *Acacia simpliciflora* Druce leaves, Noumea, 21.ii.1976, J. Gutierrez (in BCRI). *Paratypes*: 5 ♀♀ (A.nou.2), same data holotype (in BCRI); 3 ♀♀ (A.nou.3-5), 1 ♂ (A.nou.6), on *Hibiscus* sp. leaves, Noumea, 18.xi.1978, E. Schicha (A.nou.3-4 in SAM, A.nou.5-6 in BCRI); 1 ♀ (A.nou.7), on *Acacia spirorbis* Labill., Noumea, 18.xi.1978, E. Schicha; 1 ♂ (A.nou.8), on *Artocarpus altilis* (Parkinson) Fosberg, Balade, 18.xi.1978, E. Schicha; 1 ♀ (A.nou.9), 1 ♂ (A.nou.10), on *Barringtonia asiatica* (L.) Kurz, Noumea, 26.xi.1978, E. Schicha; 1 ♀ (A.nou.11), 1 ♂ (A.nou.12), on *Bougainvillea* sp., Noumea, 19.xi.1978, E. Schicha; 1 ♀ (A.nou.13), on *Datura* sp.-Mt. Dore, 22.xi.1978, E. Schicha; 1 ♀ (A.nou.14), on *Ficus proteus* Bur., Noumea-Vatu, 1.x.1975, J. Gutierrez; 1 ♀ (A.nou.15), on *Phaseolus* sp., Noumea, 4.xii.1978, E. Schicha; 1 ♀ (A.nou.16), 1 ♂ (A.nou.17), on unidentified weed, Noumea, 19.xi.1978, E. Schicha (all in BCRI).

FEMALE

Dorsum. Dorsal shield 349-367 long, 212-218 wide at L4, reticulated laterally, with 17 pairs of setae, six dorsal, two median, four prolateral, five postlateral: D1 25-32 long, D2 and D3 4, D4 to D6 5-6, M1 4-5, M2 and L1 to L3 5-7, L4 8-9, L5 5-7, L6 and L7 7-8, L8 6-7, L9 50-53. L9 slightly serrated, all other setae smooth. All setae shorter than distances between their bases and bases of setae following next in series. Three pairs of large pores and three pairs of small pores as figured. S1 7-9 and S2 5-7 long, on interscutal membrane. Peritremes extending forward near to L1 (Fig. 1).

Venter. Sternal shield 57 long, 76 wide, with three pairs of setae and two pairs of pores as figured, lobate posteriorly. Fourth pair of setae on small metasternal shields (Fig. 2). Vase-shaped ventrianal shield 100-103 long, 78-85 wide, with three pairs of long preanal setae and a pair of preanal pores 28-32 apart (Fig. 3).

Chelicera. Fixed digit 26 long, with three teeth plus pilus dentilis. Movable digit 24 long, with one backwardly pointing tooth (Fig. 4).

Spermatheca. Sack-like cervix 5-7 long atrium occupying three-quarters of width where cervix fuses with macroduct (Fig. 5).

Legs. Six macrosetae: spiniform on genu II 19-21 long, on genu III 27-28, on tibia III 25; spatulate with pointed tip on genu IV 36-39 long, on tibia IV 35-36, on basitarsus IV 50-51 (Fig. 6).

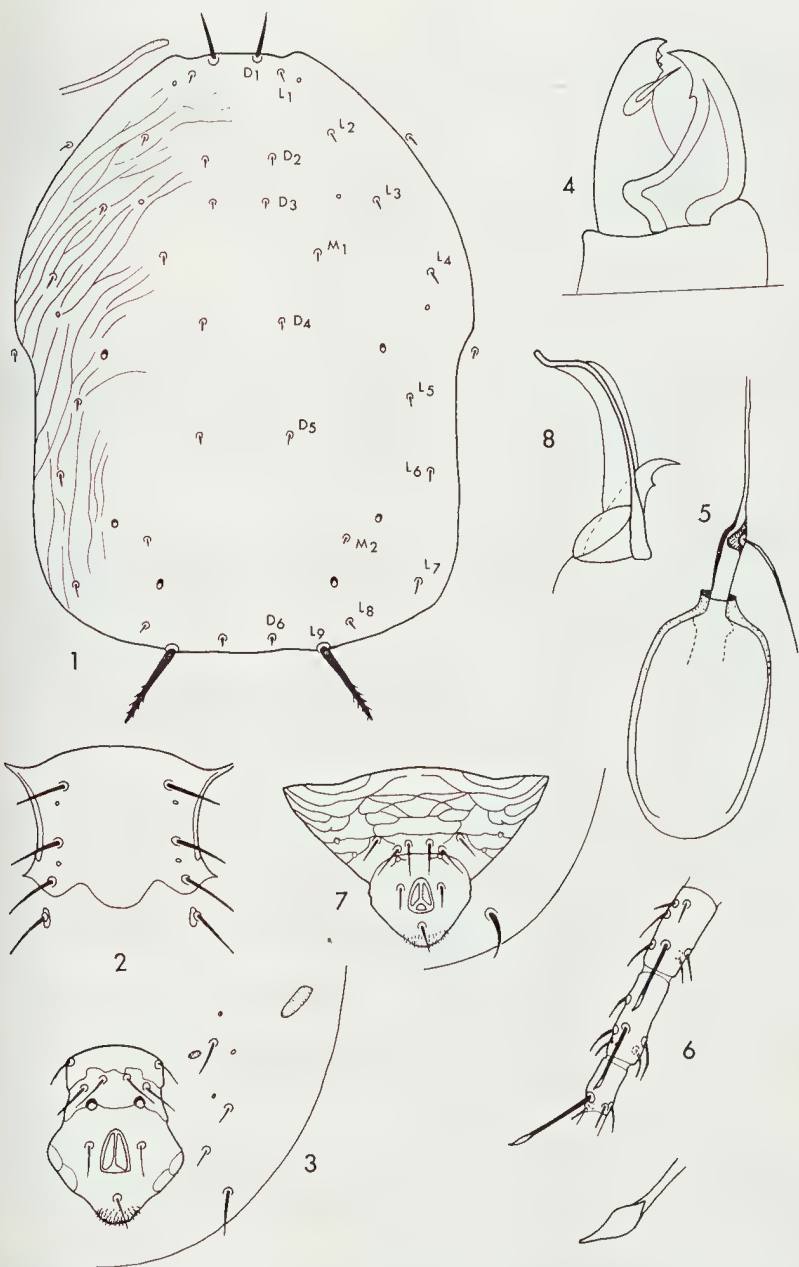
MALE

Dorsum. Dorsal shield 250-255 long, 153-155 wide at L4, with chaetotaxy resembling that of female: D1 25-30 long, D2 to D6, M1, M2 and L1 to L3 4-7, L4 9, L5 to L8 6-8, L9 40-42. S1 and S2 7-10.

Venter. Imbricated ventrianal shield 94-100 long, 146-153 wide, with three pairs of preanal setae and a pair of preanal pores 17-20 apart (Fig. 7).

Spermatodactyl. Shaft including foot 18-20 long; shaft narrow, heel rounded, toe blunt (Fig. 8).

Legs. Six macrosetae similar to those of female: on genu II 14-16 long, on genu III 20-22, on tibia III 19-20, on genu IV 30-33, on tibia IV 31, on basitarsus IV 42-46.



Figs 1-8. *Amblyseius noumeae* sp. n. (1-6) female: (1) dorsum, (2) sternal shield, (3) ventrianal shield, (4) chelicera; (5) spermatheca, (6) leg IV; (7, 8) male: (7) ventrianal shield, (8) spermatodactyl.

NOTES

A. noumeae is closely related to *A. ovalis* (Evans) from Malaysia as redescribed by Schicha (1977). However, the female of *A. noumeae* differs from that of *A. ovalis* in (1) the shorter length of all setae on its dorsal shield (D2 to D5, M1 and M2, L1 to L3 and L8 are only half as long and L4 only two fifths as long); (2) the shorter macrosetae of leg IV which are spatulate and pointed apically rather than spiniform and ending with a little knob; and (3) the three (not five) teeth on the fixed digit of the chelicerae.

Amblyseius montdorensis sp. n.

(Figs 9-16)

Types:— NEW CALEDONIA. *Holotype* ♀ (A.mon.1), on *Datura* sp. leaves, Mt. Dore, 22.xi.1978, E. Schicha (in BCRI). *Paratypes*: 2 ♀♀ (A.mon.2-3), 1 ♂ (A.mon.4), same data as holotype (in BCRI); 1 ♀ (A.mon.5), 1 ♂ (A.mon.6), on *Datura* sp., Mt. Dore, 25.xi.1976, J. Gutierrez (♀ in SAM, ♂ in BCRI); 1 ♀ (A.mon.7), on tomato, predacious on eriophyid mites, Mt. Dore, 29.ix.1975, J. Gutierrez (in BCRI); 1 ♀ (A.mon.8), on *Mucuna* sp., Noumea-Vata, 15.v.1975, J. Gutierrez (in BCRI).

FEMALE

Dorsum. Dorsal shield 306-309 long, 140-148 wide at L4, smooth, with 17 pairs of setae, six dorsal, two median, four prolateral, five postlateral: D1 19-23, D2 to D6 and M1 5-9, M2 66-67, L1 43-48, L2 17-21, L3 33-40, L4 66-75, L5 7, L6 35-36, L7 and L8 5-8, L9 82-90. M2 and L9 serrated, all other setae smooth. L2 as long as interspace L2/L3. L1, L3 and L4 longer, all other setae shorter than, distance between their bases and bases of setae following next in series. Five pairs of large pores and three pairs of small pores as figured. S1 24 and S2 8 long, on interscutal membrane. Peritremes extending forward to D1 (Fig. 9).

Venter. Sternal shield 59-60 long, 76-78 wide, with three pairs of setae and two pairs of pores, slightly excavate posteriorly. Fourth pair of setae on metasternal shields (Fig. 10). Pentagonal ventrianal shield 101-102 long, 76-88 wide, with three pairs of preanal setae and a pair of preanal pores 24-29 apart (Fig. 11).

Chelicera. Fixed digit 30-33 long, with nine teeth plus pilus dentilis. Movable digit 31-33 long, with three teeth (Fig. 12).

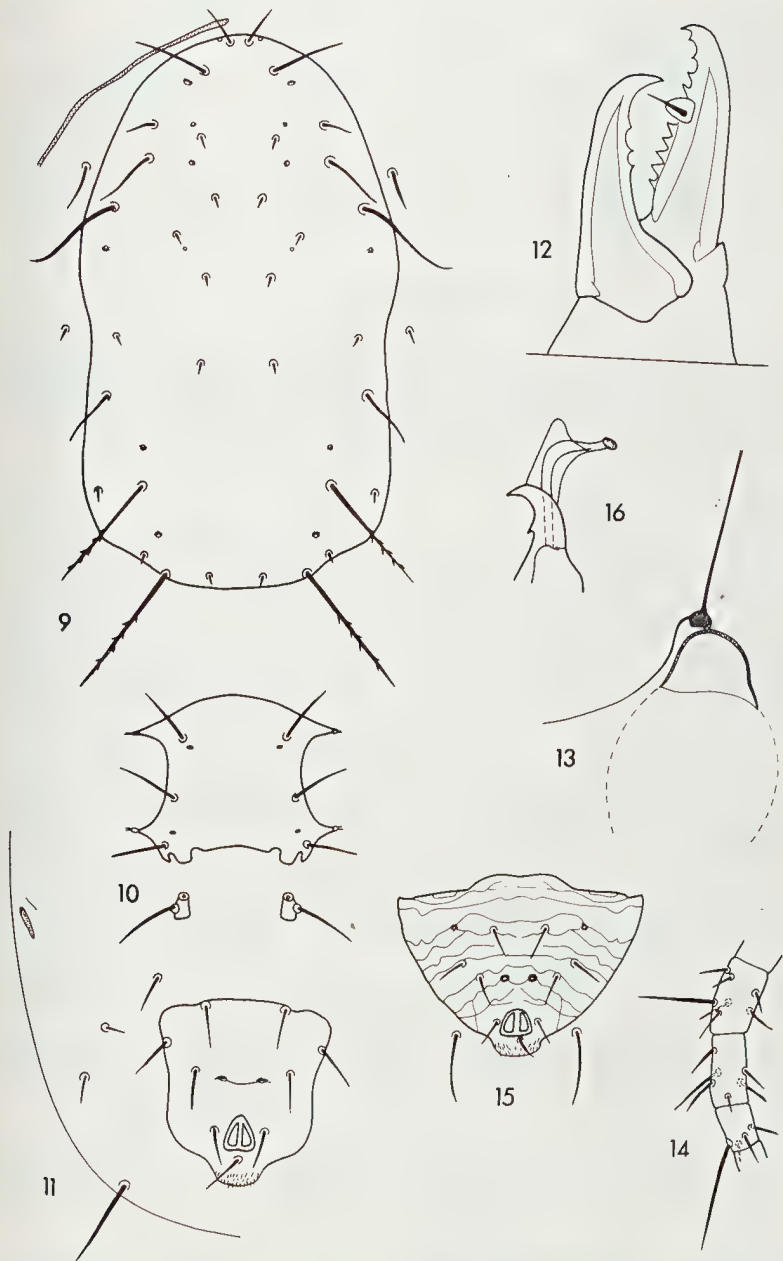
Spermatheca. Cup-shaped cervix 8-9 in diameter, knot-like atrium 3 wide (Fig. 13).

Legs. Five setaceous macrosetae: on genu II 24, on genu III 22, on genu IV 43-46, on tibia IV 33-36, on basitarsus IV 57-64 (Fig. 14).

MALE

Dorsum. Dorsal shield 220-234 long, 114-121 wide at L4, with chaetotaxy resembling that of female: D1 20-21, D2 to D6 and M1 5-8, M2 42-52, L1 32-44, L2 18-19, L3 37-39, L4 65-66, L5 9-10, L6 25-29, L7 and L8 6-9, L9 62-65. S1 21-25 and S2 11.

Venter. Creased ventrianal shield 104-119 long, 156-164 wide, with three pairs of preanal setae and a pair of preanal pores 17 apart (Fig. 15).



Figs 9-16. *Amblyseius montdorensis* sp. n. (9-14) female: (9) dorsum, (10) sternal shield, (11) ventrianal shield, (12) chelicera, (13) spermatheca, (14) leg IV; (15, 16) male: (15) ventrianal shield, (16) spermatodactyl.

Spermatodactyl. Shaft 17-18 long. Heel rounded, foot 9-10 long, ending in a small knob (Fig. 16).

Legs. Five setaceous macrosetae: on genu II 16-21, on genu III 18-20, on genu IV 29-33, on tibia IV 28-30, on basitarsus IV 48-54.

NOTES

A. montdorensis is morphologically not obviously related to any species of *Amblyseius*.

Amblyseius markwelli sp. n.

(Figs 17-24)

Types: - QUEENSLAND. *Holotype* ♀ (A.mar.1), on *Crassocephalum crepidioides* (Benth.) S. Moore, Redland Bay, 16.viii.1976, L. Markwell (in BCRI). *Paratypes*: 5 ♀♀ (A.mar.2-6), 1 ♂ (A.mar.6), same data as holotype; 1 ♀ (A.mar.7), 1 ♂ (A.mar.8), on *Ageratum houstoneianum* Mill., Redland Bay, 4.viii.1976, L. Markwell; 1 ♂ (A.mar.9), on *Galinsoga parviflora* Cav., Mt. Gravatt, 4.xii.1975, L. Markwell (all in BCRI).

FEMALE

Dorsum. Dorsal shield 336-342 long, 174-180 wide at L4, reticulated anterolaterally, with 17 pairs of setae, six dorsal, two median, four prolateral, five postlateral: D1 21-23 long, D2 to D4 7-12, D5 12-15, D6 11, M1 8-9, M2 33-36, L1 to L3 11-16, L4 to L8 14-18, L9 75-78, D6, M2 and L9 serrated, all other setae smooth. L8 as long as interspace L8/L9. All other setae shorter than distances between their bases and bases of setae following next in series. Six pairs of large pores and two pairs of small pores as figured. S1 and S2 9-14 on interscutal membrane. Peritremes extending forward to bases of D1 (Fig. 17).

Venter. Sternal shield 57 long, 63-64 wide, with three pairs of setae and two pairs of pores as figured. Fourth pair of setae on metasternal shields (Fig. 18). Pentagonal ventrianal shield 107-114 long, 97-100 wide, with three pairs of short preanal setae and a pair of oval preanal pores 18-23 apart, surrounded by three pairs of setae, six pairs of small shields, primary metapodal shield 27-28 long, secondary metapodal shield 14-17, and one pair of ventrocaudal setae 24-27 (Fig. 19).

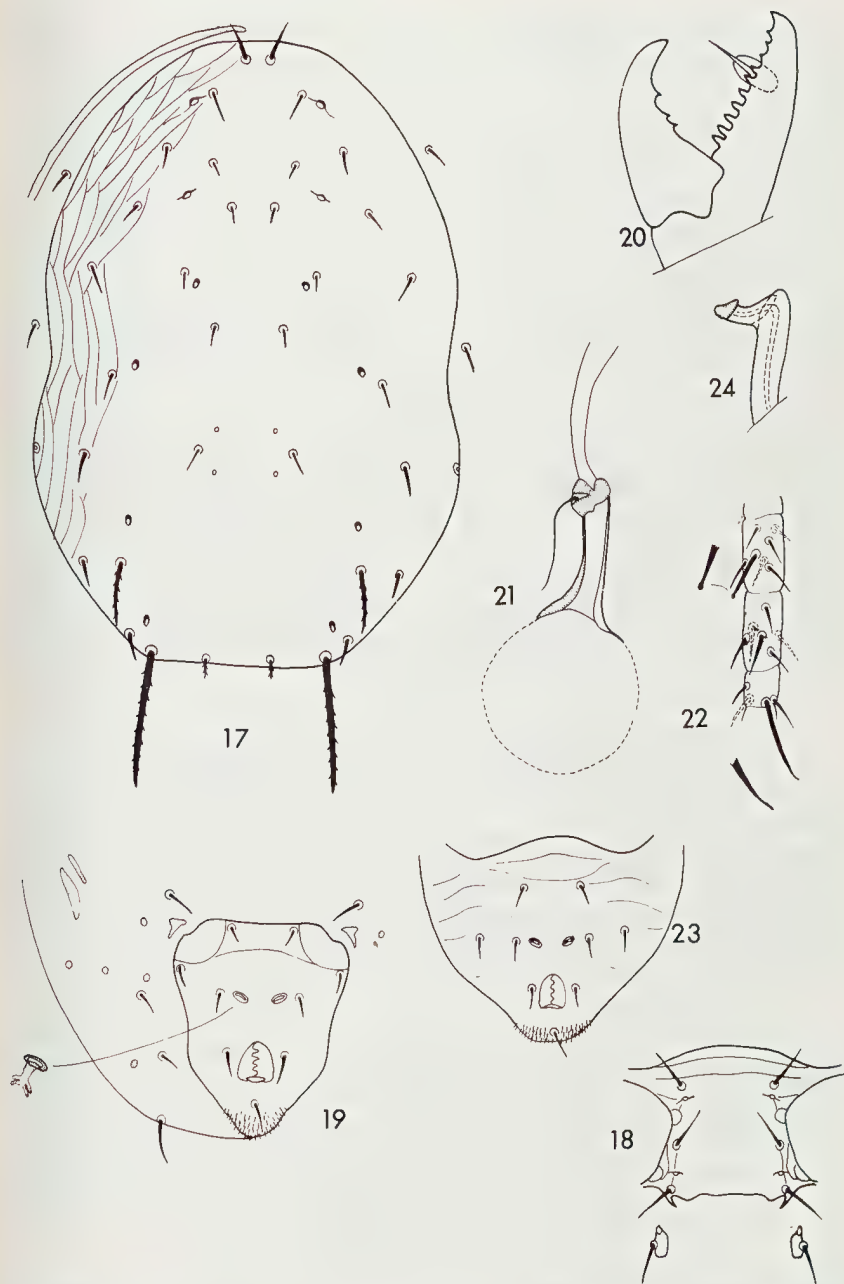
Chelicera. Both digits 26-28 long. Fixed digit with ten teeth plus pilus dentilis; movable digit with three backwardly pointing teeth (Fig. 20).

Spermatheca. Sack-like cervix 14-16 long, 4-5 wide where cervix enters vesicle; atrium occupying whole width of cervix where cervix fuses with major duct (Fig. 21).

Legs. Six macrosetae: blunt on genu II 11-12 long, knobbed on genu III 14-17, setaceous on tibia III 14-17, knobbed on genu IV 24-28, setaceous on tibia IV 18-20 and basitarsus IV 44-48 (Fig. 22).

MALE

Dorsum. Dorsal shield 267 long, 145 wide at L4, with chaetotaxy resembling that of female: D1 19 long, D2 to D6 7-9, M1 8, M2 28, L1 to L3 11-14, L4 17, L5 9, L6 16, L7 and L8 15, L9 60. S1 and S2 7-11 on dorsal shield.



Figs 17-24. *Amblysejus markwelli* sp. n. (17-22) female: (17) dorsum, (18) sternal shield, (19) ventrianal shield, (20) chelicera, (21) spermatheca, (22) leg IV; (23, 24) male: (23) ventrianal shield, (24) spermatodactyl.

Venter. Slightly creased ventrianal shield 114 long, 145 wide, with three pairs of short preanal setae and a pair of oval preanal pores 21 apart (Fig. 23).
Spermatodactyl. Narrow shaft 14 long. Foot 9 long ending in a cone-shaped knob (Fig. 24).

Legs. Six macrosetae similar to those of female: on genu II 10 long, genu III and tibia III 14, on genu IV and tibia IV 21, on basitarsus IV 43.

NOTES

A. markwelli belongs to a group of similar species of which it is most closely related to *A. oguroi* Ehara from Japan, *A. asiaticus* (Evans) from Indonesia (female and male types examined), *A. reptans* Blommers from East Madagascar, and *A. daturae* Gupta from India. However, the female of *A. markwelli* differs: from that of *A. oguroi* in (1) the shorter M2 (one half) and shorter macrosetae of leg IV; and (2) the knobbed, rather than setaceous, macroseta on genu IV; from that of *A. asiaticus* in (1) the longer L5, L7 and L8; (2) the shorter L4, M2 (considerably shorter), and macrosetae on basitarsus IV; and (3) the short, straight and broad, rather than long, coiled and thin cervix; from that of *A. reptans* in (1) the shorter L4, M1 (one half), and M2; (2) the larger ventrianal shield; and (3) the short, straight and broad, rather than long, straight and thin cervix; and from that of *A. daturae* mainly in (1) the shorter M2; (2) the larger ventrianal shield; and (3) the three, rather than four, teeth on the movable digit of the chelicerae.

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